

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION

FACT SHEET

(Pursuant to NAC 445A.874)

Permittee Name: **The Boeing Company, Rocketdyne Division**
Facility Name: **The Former Nevada Field Laboratory (NFL), Area B**
Address: **800 C Axe Handle Canyon Rd Reno, Nevada**
Permit Action: **UIC Draft Permit Issuance**
Permit Number: **UNEV2003212**
Type of Project: **Remediation**
Injection Wells (#): **Two (2)**

A. Description of Discharge

Location: The injection of treated groundwater into an infiltration pad network is part of the volatile organic compound remediation project located at Area B of the former Rockwell International Corporation Nevada Field Laboratory (NFL - Rocketdyne Division) located at 800 C Axe Handle Canyon Road, approximately 20 miles northeast of Reno, Nevada, in Section 28, T22N, R21E, Washoe County.

Characteristics: The injectate is extracted groundwater that has been treated to remove volatile organic compounds {trichloroethylene (TCE) and 1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)}. Following treatment, the injectate meets primary drinking water standards. A maximum of 30 gallons per minute of treated extracted groundwater shall be injected into the authorized primary or secondary infiltration pad.

B. Synopsis

2011 Renewal: The previous permit expired in November 2010 with a renewal application received in May 2010. The treatment system now only collects from three seep areas (SP-01, SP-02, SP-03A/SP-03B) and monitoring well purge water. Groundwater from the seeps and monitoring well purge water from the lower East Canyon monitoring wells are discharged directly into the treatment system equalization tank. Well purge water from the upper site wells is pre-treated before entering the water treatment system. The pre-treatment system consists of an equalization tank and two carbon canisters. Groundwater monitoring wells B-01A, B-10A, B-11A, B-22A and B-23A are plumbed into the treatment system as inactive extraction wells following the closure of the Lower East Canyon cleanup. According to the Corrective Action Plan (CAP), these wells must remain ready to use for extraction.

Nov. 2008 Minor Modification: The only modification to the UIC permit was to bypass the air stripper in system train #1. The permittee implemented risk reduction measures that included pretreatment of monitoring well purge water prior to discharge to the treatment building. Also, on Sept 28, 2006 the NDEP approved the 5 year remediation evaluation of the site's CAP that included the shutdown of the groundwater extraction well B-1A. As a result of these actions, the air stripper is not needed to meet the discharge limitations in the permit. The air stripping component will remain in place for future activation if necessary. In addition, the Washoe County Health District (WCHD) and the Air Quality Management District (AQMD) permit #F01712A will remain current.

2004 Permit Issue: Rocketdyne operated several areas at the NFL from 1961 to 1971 for research

and testing of rocket engines and propellants. Area B was constructed in 1962. Activities at the NFL, including Area B, ceased by 1971 and the facilities were closed. Groundwater remediation began in 1995 in Area B, and was operated under Groundwater Discharge Permit #NEV95003 from August 14, 1995 to May 14, 2004.

The treatment system for Area B is composed of two separate treatment trains constructed within one building:

System Train #1:

Groundwater from extraction well B-01A is piped underground to the equalization tank. Note that in December 2001, there was a pipeline break that led to a release of contaminated water. The water from seeps SP-01, SP-02, SP-3A/3B is collected in a French-drain type collection system that runs to the equalization tank. Monitoring well purge water is occasionally added to the equalization tank. Periodically, the water in this tank is transferred to a 0.5 to 12 gpm air stripper and then to two high-pressure liquid-phase carbon vessels plumbed in series.

System Train #2:

Groundwater from extraction wells B-10A, B-11A, and B-20A is piped underground directly to the two high-pressure liquid-phase carbon vessels plumbed in series. Three inactive groundwater extraction wells (B-21A, B-22A, and B-23A) are plumbed into system train #2 for ready use. As of January 2004, the System Train #2 has been deactivated pending the results of post-remediation rebound monitoring.

The effluent port for both System Trains is B003-EFF. The treated water is discharged through underground piping into an infiltration pad network where the water infiltrates into the shallow groundwater system. Approximately 80% of the water is piped to the primary infiltration pad immediately adjacent to the treatment system.

Treated groundwater may surface within the primary infiltration pad only within the current configuration of the approximately 3 foot diameter wildlife watering trough located within the primary infiltration pad. The watering device operates with a mechanical float valve, allowing the watering basin to fill with treated water. As the basin is filled, the float valve closes, and continues to direct treatment system effluent to the infiltration pad.

The Overflow Infiltration Pad, located east of the primary infiltration pad and north of the road, is not approved for injection.

The remaining 20% effluent is piped to the secondary infiltration pad across from the dirt road. **A variance from NAC 445A.908 is approved to operate the secondary infiltration pad at its existing location, which is within an area subject to inundation by a 50-year flood, as long as the treatment pad is repaired after flood events and before injection of treated groundwater.** Alternative methods of delivering treated water back to the aquifer at the subject site have been evaluated as inefficient, unfeasible, and impractical.

C. Receiving Water Characteristics:

Groundwater sampling at this site has demonstrated the presence of VOCs in excess of the Federal Primary Drinking Water Standards.

Treatment water is infiltrated to the surface of the shallow groundwater in the alluvium of the lower canyon. The groundwater flow direction is generally east or northeast, and the flow rate is approximately one foot per day in the alluvium and the upper fractured granodiorite underlying the alluvium.

The recharge trenches are designed to allow injection by gravity flow. Depth to groundwater in the area of the injection/recharge trench system is approximately 15 to 28 feet. There are no public water supply wells within five miles of the project site. Every May, there is an annual well testing of private domestic wells within a ½ mile radius of the plumes in each area to demonstrate the absence of target constituents.

Biodegradation of TCE and Freon-113 has been documented as evidenced by the magnitude and ratio of by-products relative to the parent compounds.

Note that there is not a drinking water standard for Freon-113. The groundwater quality at this site has demonstrated the following concentrations as determined by samples obtained during 2004:

Constituent	Existing Groundwater Concentration	Limit
TCE	<1 ppb to <22,000 ppb	5 ppb (State and Federal Limit)
cis-1,2-DCE	< 26 ppb to <500 ppb	70 ppb (State and Federal Limit)
trans-1,2-DCE	< 1 ppb to <500 ppb	100 ppb (State and Federal Limit)
Benzene	<1 ppb to <10,000 ppb	5 ppb (State and Federal Limit)
Toluene	<1 ppb to <250 ppb	100 ppb (State and Federal Limit)

D. Procedures for Public Comment

The Reno Gazette-Journal published notice of the Division's intent to issue a permit authorizing the facility to discharge to groundwater of the State of Nevada on October 11, 2011.

Notice was also being mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit will have to do so in writing for a period of 30-days following the date of the public notice. The comment period can be extended at the discretion of the Administrator. All written comments received during the comment period will be retained and considered in the final determination.

A public hearing on the proposed determination can be requested by the applicant, any affected state, any affected interstate agency, the regional administrator of EPA Region IX or any interested agency, person or group of persons.

Any public hearing determined by the Administrator to be held must be conducted in the

geographical area of the proposed discharge or any other area the Administrator determines to be appropriate. All public hearings will be conducted in accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445.605.

E. Rationale for Permit Requirements

The permit conditions will help to ensure that the injectate does not adversely affect the existing water quality or hydrologic regime.

F. Proposed Effluent Limitations and Special Conditions

Table 1

PARAMETER	FREQUENCY	LOCATION	LIMITATIONS
41 Volatile Organic Compounds (VOCs) listed in Appendix B by EPA Method 8260B ¹	Monthly	Discharge pipe at end of treatment and prior to injection into the two injection trenches (B003-EFF)	VOCs must not exceed Federal and State Drinking Water Standards.
41 Volatile Organic Compounds (VOCs) listed in Appendix B by EPA Method 8260B ¹	Semiannually ³ for B-10A; 1 sample every 5 years for B-20A	B10-A, B-20A	Monitor and Report
41 Volatile Organic Compounds (VOCs) listed in Appendix B by EPA Method 8260B ¹	Semiannually ³ when the seep is flowing	SP-4	Monitor and Report
Combined Injection Rate and Volume	Continuously	Discharge pipe at the end of treatment and prior to injection into the two injection trenches (B003-EFF)	Maximum of 30 gallons per minute (gpm). Monitor and Report average gal/day.
Depth to Groundwater and Groundwater Elevation (amsl)	Semiannual ³	B10-A	Monitor and Report

¹ Should there be detection of any parameter not listed in Table 1 by the laboratory analyzing samples, results of these analyses MUST be reported to the Division within thirty (30) days.

² When system goes on-line following a system shut-down due to non-performance, an effluent sample (B003-EFF) shall be taken daily for three days with 24 hour laboratory turnaround/reporting, weekly for three weeks with 72 hour laboratory turnaround/reporting, and monthly thereafter with semi-annual reporting.

³ Semiannual is defined as two times per year.

G. Proposed Determination

The Division has made the tentative determination to re-issue the proposed permit for a period of five years.

Prepared by: Jason Ferrin
Date: September 16, 2011